

c) Amendments to Specification (all page numbers are indicated for the clean version of Substitute Specification submitted by applicants on August 23, 2004 in their reply to the Office communication; in the reply, the number of the first page of the specification is 9).

1. The first sentence of the paragraph beginning at line 10 of page 13 has been amended to correct a grammatical error as follows:

Moreover, within ~~today~~ today's fiber industry there is another large gap, i.e., tensile properties of low-cost, low-performance, regular-molecular-weight, melt-spun, flexible-chain polymer fibers (e.g., polyethylene, polypropylene, polyester, nylon, etc.) are much lower than those of high-cost, high-performance, wholly-aromatic polymer fibers (e.g., Kevlar[®] 49, DuPont and Twaron[®], Teijin) and ultra-high-molecular-weight, solution-spun, aliphatic polymer fibers (e.g., Spectra[®], Honeywell and Dyneema[®], DSM).

2. The titles of the drawings on pages 20 and 21 have been amended to improve grammar as follows:

Fig. 1A is a longitudinal view illustrating one embodiment of the present invention where the conveyer-drawing members are rotating threaded spindles[[:]].

Fig. 1B shows, in schematic sectional view taken on line I-I in Fig. 1A, threaded spindles arranged in an isosceles hexagon[[:]].

Fig. 1C shows, in schematic sectional view taken on line II-II in Fig. 1A, chain wheels for rotating threaded spindles arranged in an isosceles hexagon[[:]].

Fig. 2A is a longitudinal view illustrating another embodiment of the present invention where each conveyer-drawing member consists of several circulating endless chain sections[[:]].

Fig. 2B is a fragmentary, schematic plan view illustrating the conveyer-drawing chain arrangement of the embodiment of Fig. 2A[[:]].

Figs. 2C is a fragmentary schematic views of the conveyer-drawing chains in Fig. 2A having fiber displacing members comprising guide semi-rings for controlling the fiber loop positioning[;].

Fig. 2D is a fragmentary sectional view taken on line I-I in Fig. 2A showing a driving line for the conveyer-drawing chains, with some parts omitted for the sake of clarity[;].

Fig. 3A is a longitudinal view illustrating another embodiment of the present invention where each conveyer-drawing member consists of a pair of parallel circulating endless chains[;].

Fig. 3B shows, in schematic sectional view taken on line I-I in Fig. 3A, pairs of chains arranged in an isosceles hexagon[;].

Fig. 3C is a fragmentary view of rollers mounted on the conveyer-drawing chains for embodiment of Fig. 3A[;].

Figs. 3D is a fragmentary view of rollers mounted on the conveyer-drawing chains for embodiment of Fig. 3A[;].

Fig. 3E is a fragmentary sectional view taken on line II-II in Fig. 3A showing a driving line for conveyer-drawing chains, with some parts omitted for the sake of clarity[;].

Fig. 3F is fragmentary view showing a driving line for the rollers supporting the fiber loops[;].

Fig. 3G is a fragmentary sectional view taken on line III-III in Fig. 3A, with some parts omitted for the sake of clarity[;].

Figs. 4 and 5 are schematic views of increase of fiber loop circumference from L_i to L_{i+1} while the loop passes distance d along the central axis that takes time ΔT [;].

Fig. 6 shows linear speeds of fiber points in case of the rotation of the fiber coil about the central axis clockwise by rotating spindles or rollers[[;]], and

3. The paragraph beginning on line 8 of page 24 has been amended to correct a grammatical error as follows:

The conveyer-drawing structure comprises a stabilizing mechanism which prevents rotation of the conveyer-drawing structure (to put it more precisely, its parts are supported by tubular support 32) about the central axis. The stabilizing mechanism is located at the receiving ends of spindles 54. It comprises a planetary carrier 35, shafts 36 and 38, a pair of planetary pinions 40, a pair of planetary pinions 42, a first sun gear 34, and a second sun gear 44.

4. The paragraph beginning on line 15 of page 26 has been amended to correct a grammatical error as follows:

Both flyers 22 and 24 make one revolution while spindles 54 make one revolution. As this takes place, each fiber loop travels along the central axis one pitch of the fiber coil. Simultaneously the fiber coil is slowly rotated about the central axis by the rotating spindles, and each point of the fiber loop passes along the loop circumference a distance equal to a spindle circumference (measured at inner diameter of the thread or spiral groove). The loops increase their circumference with each spindle revolution, the fiber gradually being drawn by rotating spindles 54 at the heat chamber temperature. The leading fiber loops are continuously unwound by flyer 24 at the delivery ends of spindles 54. The corresponding length of the fiber is conveyed through inlet 24a and guide channels 24b and 21a by the conveying rollers 28 and roller 28'. The fiber is conveyed either to the next stage of the fiber making process or, through a winder (not shown), to the receiving package (not shown). The fiber does not have permanent contact points with the spindles. This provides the uniformity of the dimensions and physical properties of the drawn fiber.

5. The first sentence of the last paragraph of page 37 has been amended to correct a grammatical error as follows:

The first version of a prototype of the drawing apparatus was ~~build~~ built.

6. The second sentence of the paragraph beginning on line 24 of page 38 has been amended to correct a grammatical error as follows:

The front door of the chamber was ~~open~~ opened, several loops of polypropylene fibers were placed about the receiving ends of the chains and supported by the rollers inside the heat chamber, the chamber door was closed, and temperature was raised to given temperatures for 30-300 seconds (see Tables III and IV).

c) Conclusion

Applicants respectfully submit that the specification, drawings, and claims are now in proper form, and the application is now in condition for allowance, which action they respectfully solicit.

Respectfully submitted by applicants:

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